Alberta
ENVIRONMENT

CODE OF PRACTICE

FOR

WATERCOURSE CROSSINGS

Water Act - Water (Ministerial) Regulation

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ALBERTA ENVIRONMENT

CODE OF PRACTICE FOR WATERCOURSE CROSSINGS (made under the *Water Act* and *Water (Ministerial) Regulation)*

Table of Contents

	Section
Definitions	1
Bound by Code of Practice	2
Notice to the Director	3
Notice where the works are not completed within time period	4
Emergency	5
Plans	6
Maps and class of water bodies	7
Watercourse crossing types, except temporary crossings	8
Temporary crossings	9
Restricted activity periods	10
Certification and confirmation	11
Reporting	12
Record keeping and information availability	13
Monitoring of works	14
Guidelines	15
Effective date	16
Code of Practice review and amendment	17

Schedules

1 Notice to the Director (Section 3)

2 Plans (Section 6)
- **Part 1**, Standards for Carrying out a Works
- **Part 2**, Requirements for Information and Written Specifications for Plans of Works, from Owner, Professional Engineer or Engineering Technical Specialist

3 Conditions for Carrying out a Works (Sections 8 and 9)
- **Part 1**, General Conditions
- **Part 2**, Watercourse Crossing Conditions
  - **A.** Type 1 Crossings
  - **B.** Type 2 Crossings
  - **C.** Type 4 Crossings
- **Part 3**, Temporary Crossing Conditions
  - **A.** Type 1 Crossings
  - **B.** Type 2 Crossings
  - **C.** Type 3 Crossings
  - **D.** Type 4 Crossings
  - **E.** Type 5 Crossings

4 Qualified Aquatic Environment Specialist's Written Specifications and Recommendations

5
- **Part 1**, Directors for this Code of Practice
- **Part 2**, Regional Boundaries Map

6 Maps (Section 7)

Definitions

1(1) All definitions in the *Water (Ministerial) Regulation* and in section 1 of the *Water Act* apply except where expressly defined in this Code of Practice.

(2) In this Code of Practice,

(a) "active channel" means those parts of the bed and banks of a water body that are without terrestrial vegetation;

(b) "this Code of Practice" means the *Code of Practice for Watercourse Crossings*, as amended or replaced from time to time;

(c) "to carry out a works" includes to commence or continue the works;

(d) "class" means the class of a water body that is specified in section 7, or that is designated by a class symbol on a map that is listed in Schedule 6;

(e) "to construct" includes to place or install a works;

(f) "Director" means, for the purposes of this Code of Practice, a Director as specified in Schedule 5;

(g) "emergency" means a situation where there is an imminent risk to the aquatic environment, public health or safety, or an imminent risk of structural failure to a watercourse crossing;

(h) "engineering technical specialist" means a person who

(i) possesses

(A) a post-secondary degree or technical diploma in engineering sciences, or

(B) educational equivalencies,

(ii) has knowledge of hydrology, hydrogeology and water management assessment, and

(iii) is currently experienced in water management and hydrological assessment methods, the determination of expected flows for flood events and the designing of watercourse crossings;

(i) "fish" means fish used for domestic, sport and commercial purposes, and fish of special concern, including but not limited to rare, endangered, threatened or vulnerable species;

(j) "maintenance" means the repair, partial replacement or structural restoration of a watercourse crossing that results or may result in the disturbance or alteration of the bed or banks or active channelof a water body;

(k) "map" means a map listed in Schedule 6, and includes the legends on a map;

(l) "mapped water body" means a water body that appears on a map that is listed in Schedule 6;

(m) "owner" means

(i) the person who owns a watercourse crossing,

(ii) a successor, assignee, executor, administrator, receiver, receiver-manager, liquidator or trustee of a person described in clause (i), or

(iii) a person who acts as the principal or agent of a person described in clause (i) or (ii);

(n) "plan" means a plan specified in section 6;

(o) "productive capacity" means the natural capability of habitats that comprise the aquatic environment to produce healthy fish that are safe for human consumption,

or to support or produce the naturally occurring diversity of aquatic organisms upon which fish depend;

(p) "professional engineer" means a professional engineer as defined in the *Engineering, Geological and Geophysical Professions Act;*

(q) "qualified aquatic environment specialist" means a person who

(i) possesses

(A) a post-secondary degree in biological sciences,

(B) a technical diploma in biological sciences, or

(C) educational equivalencies,

(ii) has a detailed knowledge of aquatic environment, including fish and fish habitat, management and assessment, and

(iii) is currently experienced with

(A) fisheries and aquatic environment assessment methods, and

(B) the determination of mitigation measures required to maintain the productive capacity of the aquatic environment, including fish habitats in Alberta that may be adversely affected by the carrying out of works in and adjacent to the water, bed and shore of water bodies;

(r) "restricted activity period" means the time period during which fish migration, fish spawning, egg incubation, fry emergence or early fry development are likely to occur in a water body;

(s) "temporary crossing" means a watercourse crossing referred to in section 9 that will remain in place for a maximum period of 6 months from the date that the crossing is constructed, unless otherwise specified by the Director under section 9(4)(a);

(t) "Type 1 crossing" means a watercourse crossing that is constructed using a single span bridge, single span pipeline bridge or other similar structure, that does not have abutments that are placed on or within the bed or within the active channel of a water body;

(u) "Type 2 crossing" means a watercourse crossing that is constructed using an open bottom culvert, or a single or multi-span bridge with abutments or piers or other similar structures that are placed on or within the bed or within the active channel of a water body;

(v) "Type 3 crossing" means a watercourse crossing that is constructed using a round, arch or box culvert or other similar structure, on or within the bed of a water body;

(w) "Type 4 crossing" means a watercourse crossing that is a ford or low level crossing, or other similar crossing, where the crossing is constructed at or below the level of the bed of the water body;

(x) "Type 5 crossing" means a temporary crossing that is constructed using a logfill;

(y) "uncoded water body" means a mapped water body that does not have a class symbol specified on a map listed in Schedule 6;

(z) "unmapped water body" means a water body that does not appear on a map listed in Schedule 6;

(aa) "UTM coordinates" means coordinates that use the Universal Transverse Mercator grid to identify or plot the specific location of a site or object;

(bb) "water body" means, for the purpose of this Code of Practice, a water body with defined bed and banks, whether or not water is continuously present, but does not include fish bearing lakes;

(cc) "watercourse crossing" means a crossing or temporary crossing and any associated permanent or temporary structures that are or will be constructed to provide access over or through a water body, including but not limited to a Type 1 crossing, Type 2 crossing, Type 3 crossing, Type 4 crossing or a Type 5 crossing, and

(i) structures and measures to isolate the location of the works,

(ii) erosion protection structures, and

(iii) sedimentation management structures,

but does not include

(iv) a pipeline crossing or telecommunication line crossing as defined in the *Code of Practice for Pipeline and Telecommunication Lines Crossing a Water Body*,

(v) the realignment of the channel of a water body beyond a distance of 20 metres upstream and downstream from the watercourse crossing, or the diversion of water from the site of a watercourse crossing, including associated structures, that require an authorization under the *Water Act*, and

(vi) structures that are required to meet clause (a) in Part 1 of Schedule 2 that are located outside the right of way of a watercourse crossing and that require an authorization under the *Water Act*;

(dd) "works" means the construction, maintenance, replacement or removal of all or part of a watercourse crossing, including a temporary crossing, or any activity associated with the construction, maintenance, replacement or removal, and includes works for a Type 1 crossing, Type 2 crossing, Type 3 crossing, Type 4 crossing or Type 5 crossing, except where otherwise specified.

(3) Notwithstanding the definition of "owner" in subsection (2)(m), where there is a requirement for an owner to provide notice to the Director under this Code of Practice, and there is more than one owner of a watercourse crossing, one owner may provide notice on behalf of the other owners in order to meet such a requirement.

Bound by Code of Practice

2(1) An owner and any person who carries out a works shall comply with the requirements set out in this Code of Practice.

(2) This Code of Practice does not apply to those watercourse crossings that are exempt from the requirement for an approval under the *Water (Ministerial) Regulation*.

Notice to the Director

3(1) For the purposes of section 4 of the *Water (Ministerial) Regulation*, an owner must provide notice to the Director, in writing, at least 14 calendar days before any works are carried out, or as otherwise specified in writing by the Director.

(2) The written notice under subsection (1),

(a) for a Type 1 crossing, Type 2 crossing, Type 3 crossing and Type 4 crossing that are not temporary crossings, must contain the information specified in clauses (a), (b), (c), (f) and (g) of Schedule 1, and any information available under clause (d) and (e) of Schedule 1, unless otherwise specified in writing by the Director;

(b) for a temporary crossing, must contain the information specified in clauses (a), (b), (c), and (h) of Schedule 1, unless otherwise specified in writing by the Director; and

subject to section 9(4)(a), authorizes an owner to carry out a works in accordance with this Code of Practice for the period of time specified in the notice.

(3) Where a written notice under subsection (1) did not contain all of the information required under clause (d) or (e) of Schedule 1, that information must be available at least 14 days before any works are carried out, and must be provided to the Director by the owner, if requested under section 13(4).

Notice where the works are not completed within time period

4(1) Where notice is provided in accordance with section 4(1) of the *Water (Ministerial) Regulation* and section 3 of this Code of Practice, and the works have not been commenced or completed within the time period specified in the notice, the notice is no longer valid, and an owner must provide a new notice prior to carrying out the works.

(2) The new notice under subsection (1) must provide

(a) with respect to a Type 1 crossing, Type 2 crossing, Type 3 crossing or Type 4 crossing that are not temporary crossings,

(i) the new date for the commencement or continuation of the works,

(ii) the estimated duration of time that activities related to the works will occur in a water body, in accordance with clause (g) of Schedule 1,

(iii) any information that has changed from the information provided in the notice under section 3, and

(iv) in cases where the works has commenced but has not been completed by the time period stated in the notice under section 3, the new expected completion date of the works; and

(b) with respect to a temporary crossing,

(i) the new date for the commencement or continuation of the works,

(ii) the estimated date of removal of the temporary crossing, and

(iii) any information that has changed from the information provided in the notice under section 3.

Emergency

5(1) Where there is an emergency and it is not possible for an owner to provide notice in accordance with section 3, an owner may take appropriate measures to deal with the emergency and must notify the Director of the emergency within 24 hours of becoming aware of the emergency.

(2) Notice under subsection (1) must contain the information specified in clauses (a) and (b) of Schedule 1, the legal description of the land on which the watercourse crossing is located, and any other information regarding the nature of the emergency that is available to the owner at the time.

(3) Within 30 days of completion of the works required to deal with the emergency, the owner must provide the following information to the Director:

(a) information specified under clause (c) in Schedule 1, other than the legal description of the land,

(b) a description of the conditions, if applicable, that were used in carrying out the works,

(c) a description of measures taken to meet the applicable requirements of sections 8 and 9, Part 1 of Schedule 2 and Schedule 3, including a statement whether the works incorporated the specifications and recommendations of a qualified aquatic environment specialist.

Plans

6(1) At least 14 days before a works is carried out, except for those works with respect to a temporary crossing, an owner must have prepared and completed a plan for the works

(a) that meets the standards for carrying out a works specified in Part 1 of Schedule 2;

(b) that contains or incorporates the information and written specifications under Part 2 of Schedule 2, as required under subsection (2),

(i) that are prepared by either a professional engineer or ar engineering technical specialist, whichever is considered appropriate by the owner, and that contain the stamp, certification and signature of either the professional engineer or the certification and signature of the engineering technical specialist, as required under section 11(2)(a) and (b); or

(ii) that are prepared by an owner in those situations specified in subsection (2), and that contain the confirmation of the owner as required under section 11(2)(c);

(c) that, in addition to the requirements specified under clauses (a) and (b), contains or incorporates the following:

(i) the type of watercourse crossing and the conditions for carrying out a works, determined in accordance with section 8 and Schedule 3, including any applicable written specifications and recommendations of a qualified aquatic environment specialist;

(ii) an outline of the contingency measures to be taken in the event of potential problems resulting from adverse conditions or delays in carrying out or completing the works, and that take into account any restricted activity periods; and

(iii) in addition to any monitoring measures contained in the written specifications and recommendations of a professional engineer, engineering technical specialist, owner or qualified aquatic environment specialist, specification of the monitoring measures that will, during the anticipated life

of the watercourse crossing, be required to meet the requirements of this Code of Practice.

(2) Information and written specifications that must be included in a plan under subsection (1)(b)

(a) must be prepared by either a professional engineer or an engineering technical specialist, whichever is considered appropriate by the owner, except as specified in clause (b);

(b) may be prepared by the owner only in those situations where

(i) the watercourse crossing is to be removed, or

(ii) where

(A) the watercourse crossing is or will be located in an unmapped water body that enters any class of mapped water body, at a distance of greater than 2 kilometres upstream from the mouth of the unmapped water body, and

(B) there is no documented evidence of fish presence in the unmapped water body.

(3) In addition to complying with other requirements specified in this Code of Practice, an owner and a person who carries out a works must comply with the plan prepared for the works under subsection (1) except where measures must be taken to deal with an emergency.

(4) Notwithstanding subsection (1), after notice to the Director has been provided in accordance with section 3(1), an owner

(a) may change a plan only where the change complies with this Code of Practice, and

(b) must provide notice of the change to the Director in accordance with section 3 and Schedule 1, where the change in the plan modifies the information that was provided to the Director under section 3(2) or 3(3).

(5) Where a change is made to a plan under subsection (4), all of the provisions of this Code of Practice apply to the change.

Maps and class of water bodies

7(1) For the purposes of this Code of Practice, a map that is listed in Schedule 6 forms part of this Code of Practice, and

(a) designates the class of a mapped water body as Class A, B, C, or D,

(b) specifies the restricted activity period for classes of water bodies,

(c) describes the location of Class A and B water bodies, and

(d) may specify special conditions for some water bodies.

(2) The class of a **mapped** water body, except for an uncoded water body, is the class that is designated by a class symbol on a map.

(3) The class of an **uncoded** water body is as follows:

(a) Class D, unless otherwise specified in clause (b);

(b) where an uncoded water body enters a mapped water body that is a Class A, B or C water body, the portion of the uncoded water body for a distance of 2 kilometres upstream from the mouth of the uncoded water body is the same class as the mapped water body that is entered.

(4) The class of an **unmapped** water body is as follows:

(a) where an unmapped water body enters a mapped Class A water body, the unmapped water body is

(i) Class A for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body, including where the unmapped water body is dry or frozen to the bottom at the time of the works, and

(ii) Class B for any other portion of the unmapped water body;

(b) where an unmapped water body enters a mapped Class B water body, the unmapped water body is

(i) Class B for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body, including where the unmapped water body is dry or frozen to the bottom at the time of the works, and

(ii) Class C for any other portion of the unmapped water body;

(c) where an unmapped water body enters a mapped Class C water body, the unmapped water body is Class C for all portions of the unmapped water body;

(d) where an unmapped water body enters a mapped Class D water body, the unmapped water body is Class D for all portions of the unmapped water body;

(e) where an unmapped water body enters a fish bearing lake, the unmapped water body is Class C, whether or not the fish bearing lake appears on a map.

Watercourse crossing types, except temporary crossings

8(1) **A new watercourse crossing** must be constructed in accordance with the applicable parts of section 10 and Schedules 2 and 3, and the written specifications and recommendations of a qualified aquatic environment specialist if required under subsections (5) and (6), and the type of **new watercourse crossing** that must be constructed is as follows:

(a) in or over a **Class A** water body, only a Type 1 crossing for pedestrian and equestrian purposes;

(b) in or over a **mapped Class B** water body, **in order of preference:**

(i) a Type 1 crossing, or

(ii) a Type 2 crossing, by isolating the location of the construction, only if

(A) a Type 1 crossing cannot be used, or

(B) a Type 2 crossing will meet the requirements of clause (a) in Part 1 of Schedule 2,

as determined in accordance with subsection (6);

(c) in or over an **unmapped Class B** water body, **in order of preference:**

(i) a Type 1 crossing,

(ii) a Type 2 crossing, by isolating the location of the construction, only if

(A) a Type 1 crossing cannot be used, or

(B) a Type 2 crossing will meet the requirements of clause (a) in Part 1 of Schedule 2,

as determined in accordance with subsection (6); or

(iii) a Type 3 crossing, by isolating the location of the construction, only if

(A) a Type 2 crossing cannot be used, or

(B) a Type 3 crossing will meet the requirements of clause (a) in Part 1 of Schedule 2,

as determined in accordance with subsection (6);

(d) in or over a **Class C** water body, **in order of preference:**

(i) a Type 1 crossing,

(ii) a Type 2 crossing, by isolating the location of the construction, only if

(A) a Type 1 crossing cannot be used, or

(B) a Type 2 crossing will meet the requirements of clause (a) in Part 1 of Schedule 2,

as determined in accordance with subsection (6); or

(iii) a Type 3 crossing, by isolating the location of the construction, or a Type 4 crossing, only if

(A) a Type 2 crossing cannot be used, or

(B) a Type 3 crossing or Type 4 crossing will meet the requirements of clause (a) in Part 1 of Schedule 2,

as determined in accordance with subsection (6);

(e) in or over a **Class D** water body, a Type 1 crossing, Type 2 crossing, Type 3 crossing, or Type 4 crossing.

(2) The **replacement of any type of existing watercourse crossing** must be constructed in accordance with the applicable parts of section 10 and Schedules 2 and 3, and the written specifications and recommendations of a qualified aquatic environment specialist if required under subsections (5) and (6), and **the type of watercourse crossing for the replacement** that must be constructed, **in order of preference,** is as follows:

(a) in or over a **Class A** water body,

(i) a Type 1 crossing, or

(ii) a Type 2 crossing, by isolating the location of the construction;

(b) in or over a **mapped Class B** water body,

(i) a Type 1 crossing, or

(ii) a Type 2 crossing, by isolating the location of the construction;

(c) in or over an **unmapped Class B** water body,

(i) a Type 1 crossing,

(ii) a Type 2 crossing, by isolating the location of the construction, or

(iii) a Type 3 crossing, by isolating the location of the construction;

(d) in or over a **Class C** water body,

(i) a Type 1 crossing, or

(ii) a Type 2 crossing or Type 3 crossing, by isolating the location of the construction, or a Type 4 crossing;

(e) in or over a **Class D** water body, a Type 1 crossing, Type 2 crossing, Type 3 crossing or Type 4 crossing.

(3) The **maintenance or removal of any type of existing watercourse crossing** must be carried out as follows:

(a) with respect to a **Class A, B and C** water body, by isolating the location of the construction, and in accordance with the applicable parts of section 10 and Schedules 2 and 3;

(b) with respect to a **Class D** water body, in accordance with the applicable parts of section 10 and Schedules 2 and 3.

(4) Notwithstanding subsections (1), (2) and (3), where a water body is **dry or frozen** to the bottom at the time of the carrying out of the works, including the **construction, replacement, removal, or maintenance** of a watercourse crossing, the requirement to isolate the location of the construction or works does not have to be met.

(5) An owner must obtain the written specifications and recommendations of a qualified aquatic environment specialist for watercourse crossings referred to in

(a) subsections (1)(b)(ii), (1)(c)(ii), (1)(c)(iii), (1)(d)(ii), and (1)(d)(iii);

(b) subsection (2), except subsection (2)(e) or where there is replacement of a Type 1 crossing with a Type 1 crossing; and

(c) subsection (3)(a).

(6) For the purposes of subsection (1),

(a) a professional engineer, engineering technical specialist or other qualified person must determine whether a type of crossing can be used, taking into account the technical or environmental feasibility of the type of crossing;

(b) a qualified aquatic environment specialist must determine whether a type of crossing will meet the requirements of clause (a) in Part 1 of Schedule 2.

(7) A qualified aquatic environment specialist must

(a) consider any applicable restricted activity periods; and

(b) meet the requirements of clauses (a) and (g) in Part 1 of Schedule 2 and of Schedule 4;

in preparing any written specifications and recommendations under this section.

(8) This section does not apply to temporary crossings.

Temporary crossings

9(1) Subject to subsection (2), a **temporary crossing** must be constructed in accordance with the applicable parts of Schedules 2 and 3 and the written specifications and recommendations of a qualified aquatic environment specialist if required under subsection (2), and **the type of temporary crossing** that must be constructed is as follows:

(a) in or over a **Class A** water body, at any time,

(i) a Type 1 crossing, or

(ii) a Type 2 crossing where the construction is in conjunction with the replacement or maintenance of an existing watercourse crossing or other existing structure;

(b) in or over a **Class B** water body,

(i) a Type 1 crossing, at any time,

(ii) a Type 2 crossing, at any time,

(iii) a Type 4 crossing, only
(A) when the water body is dry, or
(B) when the crossing site is not covered by ice, or
(iv) a Type 5 crossing, only when the water body is dry or frozen to the bottom, or there is sufficient ice-cover to support the crossing, however the crossing must be removed before spring break-up;

(c) in or over a **Class C** water body,
(i) a Type 1 crossing, at any time,
(ii) a Type 2 crossing, at any time,
(iii) a Type 3 crossing, only
(A) when the water body is dry, or
(B) when the crossing site is not covered by ice, by isolating the location of the construction,
(iv) a Type 4 crossing, only
(A) when the water body is dry, or
(B) when the crossing site is not covered by ice, or
(v) a Type 5 crossing, only
(A) when the water body is dry or frozen to the bottom, or
(B) when there is sufficient ice-cover to support the crossing, however the crossing must be removed before spring break-up;

(d) in or over a **Class D** water body,
(i) a Type 1 crossing, Type 2 crossing, Type 3 crossing or Type 4 crossing, at any time, or
(ii) a Type 5 crossing, only
(A) when the water body is dry or frozen to the bottom, or
(B) when there is sufficient ice-cover to support the crossing, however the crossing must be removed before spring break-up.

(2) An owner must obtain the written specifications and recommendations of a qualified aquatic environment specialist for a temporary crossing referred to in subsections (1)(a)(ii), (1)(b)(ii), (1)(b)(iii)(B), (1)(c)(ii), (1)(c)(iii)(B), and (1)(c)(iv)(B).

(3) A qualified aquatic environment specialist must meet the requirements of clauses (a) and (g) in Part 1 of Schedule 2 and of Schedule 4, in preparing any written specifications and recommendations under this section.

(4) An owner
(a) must remove a temporary crossing
(i) no later than 6 months from the date when the construction commenced, unless otherwise specified in writing by the Director; and
(ii) in accordance with the applicable parts of Schedules 2 and 3; and
(b) must restore the bed and banks of the water body to the condition it was in prior to the construction of the temporary crossing, or if not possible, to a condition that meets the requirements of clauses (a) and (g) of Part 1 of Schedule 2.

(5) Sections 6, 8, 10(1), 10(2), 10(3), 10(4), 10(5), 10(6), 10(7), 11, 13 and 14 of this Code of Practice do not apply to a temporary crossing.

Restricted activity periods

10(1) Unless otherwise authorized under this section, works, including those referred to in section 8, must not be carried out within any applicable restricted activity period.

(2) Works

(a) must be carried out in or over a mapped Class A water body, within the time period recommended by a qualified aquatic environment specialist;

(b) must be carried out for a Type 2 crossing, Type 3 crossing and Type 4 crossing in or over a mapped Class B and C water body, outside the restricted activity period specified on the applicable map;

(c) may be carried out in or over a Class D water body, at any time.

(3) Where an unmapped water body enters a mapped Class A water body,

(a) the works must be carried out within the period recommended by a qualified aquatic environment specialist for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body;

(b) for any other portion of the unmapped water body than that specified in clause (a),

(i) the unmapped water body has the restricted activity period of the nearest mapped Class B or C water body entering the mapped Class A water body, or

(ii) if there is no mapped water body entering the mapped Class A water body, the unmapped water body has the restricted activity period for the mapped Class B or C water body that is immediately downstream of the mapped Class A water body.

(4) Where an unmapped water body enters a mapped Class B water body, the restricted activity period is the restricted activity period for the mapped Class B water body.

(5) Where an unmapped water body enters a mapped Class C water body,

(a) the restricted activity period for the portion of the unmapped water body for a distance of 2 kilometres upstream from the mouth of the unmapped water body, is the restricted activity period for the mapped Class C water body, and

(b) for any other portion of the unmapped water body than that specified in clause (a), the restricted activity period is the restricted activity period of the nearest mapped water body that enters the mapped Class C water body.

(6) Where an unmapped water body enters a fish bearing lake, whether or not the fish bearing lake appears on a map, the restricted activity period for the unmapped water body

(a) is the same as that specified for the nearest mapped water body entering the fish bearing lake,

(b) if there is no mapped water body entering the fish bearing lake, is the same as that specified for the mapped outlet water body of the fish bearing lake, or

(c) if there is no mapped outlet water body of the fish bearing lake, is the same as that specified for the nearest mapped water body that is designated as a mapped Class C water body.

(7) Where a qualified aquatic environment specialist determines that a works can be carried out within a restricted activity period referred to under subsections (2)(b), (3)(b), (4), (5)

and (6), and still meet the requirements of Part 1 of Schedule 2, the works may be carried out within that restricted activity period, and must be carried out in accordance with the written specifications and recommendations of the qualified aquatic environment specialist.

(8) A qualified aquatic environment specialist must consider an applicable restricted activity period in preparing any written specifications and recommendations under this Code of Practice.

Certification and confirmation

11(1) Where a qualified aquatic environment specialist has prepared specifications and recommendations under this Code of Practice, the qualified aquatic environment specialist must certify in writing that the written specifications and recommendations prepared by the specialist meet the requirements of clause (a) in Part 1 of Schedule 2.

(2) Where written specifications for a plan for a works associated with a watercourse crossing under section 6(1)(b),

(a) were prepared by a professional engineer, the engineer must certify in writing that the written specifications included in the plan meet the standards specified in clauses (c) and (d) in Part 1 of Schedule 2, and the design drawings must include the stamp and signature of the professional engineer;

(b) were prepared by an engineering technical specialist, the engineering technical specialist must certify in writing that the information and written specifications included in the plan meet the standards specified in clauses (c) and (d) of Part 1 of Schedule 2;

(c) were prepared by an owner, the owner must confirm in writing that the information and written specifications included in the plan meet the standards specified in Part 1 of Schedule 2.

(3) All certifications and confirmations referred to under subsections (1) and (2) must be prepared a minimum of 14 days before the works is carried out.

(4) After the works has been completed, an owner must within one year of the date of completion of the works, confirm in writing that

(a) the plan prepared under section 6 was followed in carrying out the works, and

(b) the standards of Part 1 of Schedule 2 have been met.

Reporting

12(1) An owner must, within 24 hours, report to the Director by telephone, facsimile or e-mail, or in any other manner specified in writing by the Director, a contravention of this Code of Practice, except for a contravention under section 11, 13 or 14, and must include information relating to possible environmental impacts resulting from the contravention and initial actions taken to mitigate the contravention.

(2) An owner must, within 7 calendar days of reporting a contravention under subsection (1), or within another time period specified in writing by the Director, provide to the Director a written report that contains the following information:

(a) a description of the contravention;
(b) an explanation as to why the contravention occurred;
(c) a summary of all preventative measures and actions that were taken prior to the contravention;
(d) a summary of all measures that were taken to mitigate the initial damage and proposed measures to address any remaining problems related to the contravention;
(e) the names, addresses, phone numbers and responsibilities of all persons responsible for carrying out the works at the time that the contravention occurred; and
(f) proposed preventative measures designed to prevent future contraventions.

Record keeping and information availability

13(1) An owner must compile and retain the following records within the time period specified in subsection (2);

(a) the names, addresses and phone numbers of the owners of the watercourse crossing;
(b) a copy of the plan prepared for the watercourse crossing;
(c) any as built plans or as constructed plans, if such as built or as constructed plans were prepared;
(d) the time period during which the carrying out of the works occurred, including the start and completion dates;
(e) all photographs or video-recordings taken under section 14(2);
(f) a copy of all certifications and confirmations referred to in section 11.

(2) An owner must meet the following time requirements for the preparation or compilation of the records specified in subsection (1), unless otherwise specified in writing by the Director:

(a) a plan under section 6 must be available at least 14 days before the works are carried out;
(b) for records referred to in subsection (1)(a), (c), (d) and (e), records must be compiled within 3 months of completion of the works or within another time period specified by the Director;
(c) for certifications and confirmations referred to in subsection (1)(f), records must be compiled within the time periods specified in section 11.

(3) An owner must retain all records referred to in subsection (1) for one year after the completion of the removal of the watercourse crossing.

(4) An owner must, within the time period specified in writing by the Director, provide to the Director any requested information or records retained under subsection (1), or information relating to a qualified aquatic environment specialist who has certified specifications and recommendations.

Monitoring of works

14(1) The owner must monitor a watercourse crossing in accordance with the plan prepared under section 6 to ensure that the requirements of this Code of Practice are met over the operational life span of the crossing.

(2) The owner must, for water bodies that are designated as Class A, B or C water bodies, take the following photographs or video-recordings at a watercourse crossing site before the works are commenced:

(a) one or more photographs or video-recordings of the water body and its banks upstream from the watercourse crossing site;

(b) one or more photographs or video-recordings of the water body and its banks downstream from the watercourse crossing site; and

(c) two or more photographs or video-recordings of the banks at the watercourse crossing site, one of each bank taken from the opposite bank.

Guidelines

15 The Department may publish Guidelines to assist in the interpretation and implementation of this Code of Practice, however such Guidelines do not form part of this Code of Practice.

Effective date

16 This Code of Practice comes into force on May 1, 2000.

Code of Practice review and amendment

17 Alberta Environment may institute a review and amendment of this Code of Practice at any time, however this Code of Practice will be reviewed by May 1, 2003.

SCHEDULE 1

Notice to the Director
(Section 3)

Information that must be contained in a notice for the purposes of section 3:

(a) the name, address and phone number of at least one owner of the watercourse crossing;

(b) the name and phone number of the person to be contacted with respect to the watercourse crossing;

(c) a map, diagram, or air photo that shows the watercourse crossing location in relation to the boundaries of the quarter section that the crossing is located in, including the legal description of the land and the name of the water body (if named) that is crossed, and the UTM coordinates, if available, on which the watercourse crossing is located;

(d) the type or types of watercourse crossing structures and conditions determined in accordance with sections 8, 9, 10 and Schedule 3 that will be used in carrying out the works, including, where applicable, the rationale for not using the preferred type of watercourse crossing referred to in section 8, and whether physical or other measures are required to meet clause (a) in Part 1 of Schedule 2;

(e) the diameter in centimetres or metres of the culvert, the length of the culvert in metres or the number and length of spans in the bridge, the width of the watercourse crossing in metres and a description of any other structure that is part of the watercourse crossing;

(f) whether the works to be carried out will incorporate the specifications and recommendations prepared by a qualified aquatic environment specialist, and if so, the name of the qualified aquatic environment specialist, and consulting company name, if applicable;

(g) the expected commencement and completion dates of the works, including the estimated duration of time that the works will be carried out in a water body;

(h) for a temporary crossing,

  (i) the type of structure,

  (ii) the expected date of removal, and

  (iii) whether a qualified aquatic environment specialist will provide written specifications and recommendations, and if so, the name of the qualified aquatic environment specialist, and consulting company name, if applicable.

SCHEDULE 2

Plans
(Section 6)

PART 1
STANDARDS FOR CARRYING OUT A WORKS

Standards that must be met for carrying out a works for the purposes of this Code of Practice:

(a) Upon completion of the works, the quantity and productive capacity of the aquatic environment, including fish habitat, at the watercourse crossing site, where technically feasible, and adjacent to the watercourse crossing site must be equivalent to or exceed that which existed prior to commencing the works;

(b) The selection of a watercourse crossing site must:
  (i) avoid, or if not possible,
    (A) minimize disturbance of the bed and banks of the water body or
    (B) minimize realignment of the water body,
  (ii) avoid, if possible, high gradient areas, unstable slopes and actively eroding banks, and bank seeps or springs;

(c) The capacity of any culverts and bridges in a watercourse crossing must ensure that:
  (i) the increase in any back-flooding does not result in flood damage to private and public property,
  (ii) the bed, pier or abutment scour will not endanger the stability of the works or alter the location of all or part of the water body,
  (iii) enough freeboard is provided to pass floating debris and ice without affecting the stability of the watercourse crossing or creating a potential for a blockage of the flow of the water body, and
  (iv) fish migration through or over the crossing is maintained by ensuring that, at a minimum, water velocities over or through the crossing do not create a barrier to migrating fish for more than 3 consecutive days at a 1 in 10 year recurrence interval;

(d) Works with respect to a watercourse crossing must be carried out in a manner,
  (i) that protects the bed and bank adjacent to the bridge or culvert structure from bed scour and erosion,
  (ii) that maintains or approximates the existing slope of the bed of the water body,
  (iii) that, where applicable, results in the placement of a culvert at or below the level of the water body bed;

(e) Measures must be implemented to avoid, or if not possible, minimize impairment of water quality of the water body;

(f) Measures must be implemented to avoid harm to or destruction of fish and fish eggs, and the harmful alteration, disruption or destruction of fish habitat, including but not limited to fish spawning and nursery areas;

(g) Upstream and downstream fish migrations must not be impeded over the life span of the watercourse crossing, following completion of the works;

(h) The flow of the water body must be maintained at the watercourse crossing site at all times through or around the crossing;

(i) Measures must be implemented to minimize the duration and amount of disturbance of the bed and banks of the water body;

(j) Measures must be implemented to prevent the deposition into the water body of deleterious substances and materials that are toxic to fish and other aquatic organisms;
(k) Measures must be implemented to prevent the transfer of biota that is not indigenous to the environment at the watercourse crossing site;
(l) Measures must be implemented to minimize erosion and sedimentation into the water body, including temporary erosion control measures;
(m) Measures must be implemented to permanently stabilize all disturbed areas on the watercourse crossing site sloping to the water body within one full growing season;
(n) Debris disposal, cleanup and initial stabilization must be carried out as part of the works.

PART 2
REQUIREMENTS FOR INFORMATION AND WRITTEN SPECIFICATIONS FOR PLANS OF WORKS, FROM OWNER, PROFESSIONAL ENGINEER OR ENGINEERING TECHNICAL SPECIALIST

Written specifications that must be provided under section 6(1) must

(a) meet the standards for carrying out a works specified in Part 1 of this Schedule;
(b) incorporate any written specifications and recommendations prepared by a qualified aquatic environment specialist for the works; and
(c) include the design specifications of the works and other information related to the works, including:
    (i) information on a page which is a minimum size of 21 centimetres by 27 centimetres, in a suitable format and scale, and that includes:
        (A) a map, diagram, or air photo that shows the location of the works in relation to the boundaries of the quarter section that the watercourse crossing will be located in, the legal description of the land, and UTM coordinates, if available, on which the watercourse crossing is located,
        (B) the name of the water body that is crossed if known,
        (C) the diameter of the culvert or the number of spans in a bridge or a description of any other structure or causeway to be used as part of the watercourse crossing,
        (D) piers, abutments and other features that are part of the watercourse crossing, shown through the width of the active floodplain of the water body,
        (E) the length in metres of the bridge or culvert in metres that is part of the watercourse crossing and the height of crossing measured from stream bed to the top of the crossing,
        (F) all surveyed and unsurveyed profile and cross-sectional drawings required for the design;
    (ii) any hydraulic, hydrologic, or hydrogeologic analysis performed for the design of the works; and
    (iii) a description of any other specifications for the works that the owner or professional engineer or engineering technical specialist considers appropriate.

SCHEDULE 3

Conditions for Carrying Out a Works
(Sections 8 and 9)

In addition to the requirements regarding watercourse crossing structures and conditions specified in sections 8, 9 and 10 of this Code of Practice, the following conditions must be met in carrying out a works:

PART 1
GENERAL CONDITIONS (Apply to all Watercourse Crossings, Except Type 1 Crossings)

(a) Subject to clauses (c) and (g) of Part 2, if a water body is flowing, the water body channel must not be constricted by more than two-thirds (2/3) of its width during the carrying out of a works;

(b) Where any excavation of the bed of a water body occurs,
  (i) the excavated areas must be backfilled with material that is of the same quality and gradation that was removed, except for the Battle, Vermilion and Beaver Rivers where special conditions apply as specified on the appropriate map;
  (ii) where the width of the crossing measured between the banks of the water body is less than 15 metres, all material excavated from the bed or banks of the water body must be removed and stored at a location out of the water body until the materials are removed from the location or backfilled into the water body;
  (iii) where the width of the crossing measured between the banks of the water body is equal to or greater than 15 metres, and it is necessary to stockpile the material excavated from the bed in the water body, the material must be stockpiled in a manner that avoids areas of highest water velocity, and does not windrow the material across the channel perpendicular to the flow of water;

(c) Where **isolating** the location of a works,
  (i) the isolation must be carried out in a manner that isolates the location of the works from the flowing water in the water body, and eliminates the flow of surface water through the construction site;
  (ii) any berms, coffer dams or other isolation structures used in a works within a flowing watercourse are to be
    (A) constructed of non-erodable material or protected from erosion for the entire period of time the berm, coffer dam or isolation structure will be in place, and
    (B) removed completely upon completion of the works;
  (iii) in cases where the entire flow of water of a water body is diverted around the watercourse crossing site, it must be returned to the water body downstream of the crossing site;
  (iv) where ice is present on a water body, any diverted water must be returned to the water body downstream of the watercourse crossing site, under the ice if ice is present;
  (v) silt fences may be used in situations where there is low flow in a water body, where appropriate, to isolate the construction area from the water body;
  (vi) during the carrying out of the works, any fish that are found within the isolated portion of the watercourse crossing site are to be removed, without harm to or

destruction of the fish, to an area of the water body immediately adjacent to the watercourse crossing, outside the isolated portion of the watercourse crossing site;

(vii) during a restricted activity period, when fish are spawning or migrating, an isolation method that blocks the entire width of a water body must not be in place for longer than 3 consecutive days, unless upstream and downstream fish migration is accommodated;

(viii) during a period of time outside a restricted activity period, an isolation method must not be in place for longer than 14 consecutive days unless upstream and downstream fish migration is accommodated;

(ix) any water entering an intake of a bypass pumping system must pass through a screen with openings that are no larger than 2.54 millimetres and at a velocity that does not result in the entrainment and entrapment of fish or fish fry;

(x) any accumulations of silt and sediment within the isolation area resulting from the works in the isolation area must be removed to an upland site prior to restoration of water flow through the isolation site;

(xi) any water removed from an isolation area, must be discharged in a manner that ensures suspended sediments are not introduced into a water body.

PART 2
WATERCOURSE CROSSING CONDITIONS (Except Temporary Crossings)

A. TYPE 1 CROSSINGS

Where a Type 1 crossing is used, no alteration of the active channel of a water body is allowed except for minor disturbances associated with the construction of a watercourse crossing.

B. TYPE 2 CROSSINGS

Where a Type 2 crossing is used, the width of the active channel must not be significantly narrowed.

C. TYPE 4 CROSSINGS

Where a Type 4 crossing is used, and where granular material or rock is used for fill and hardening of the bed of the water body at the watercourse crossing site, it must be clean and without silt or other fine materials.

PART 3
TEMPORARY CROSSING CONDITIONS

A. TYPE 1 CROSSINGS

For single span bridges that are temporary crossings constructed of native timber,

(a) logs used in the construction must be delimbed;

(b) except where fill material is ice or snow, fill material placed on the bridge deck must be held in place and separated from the deck by a geotextile fabric or natural mat that is impermeable to soil movement;
(c) removal of the fill material and mat must precede removal of the bridge structure.

B. TYPE 2 CROSSINGS

All temporary crossings that are Type 2 crossings must be an appropriate size and constructed in a manner to accommodate the flows of the water body that are expected during the period of use so that any back-flooding does not result in damage to public and private land and property.

C. TYPE 3 CROSSINGS

All temporary crossings that are Type 3 crossings must
(a) be an appropriate size and constructed in a manner to accommodate flows expected during the period of use so that any back-flooding does not result in damage to public and private land and property; and
(b) ensure fish passage is maintained.

D. TYPE 4 CROSSINGS

Where a Type 4 crossing is used, and where granular material or rock is used for fill and hardening of the bed of the water body at the watercourse crossing site, it must be clean and without silt or other fine materials.

E. TYPE 5 CROSSINGS

Where a Type 5 crossing is used:

(a) logs used in constructing the crossing must be delimbed and bucked to at least 1.5 metres longer than the width of the grade fill on each end of the crossing structure;
(b) except where fill material is ice or snow, fill material placed on top of the temporary crossing must be held in place and separated from the deck by a geotextile fabric or natural mat that is impermeable to soil movement;
(c) removal of the fill material and mat must precede removal of the logs;
(d) the bed and banks of the water body must not be altered or disturbed, except for minor disturbances associated with the construction;
(e) it must be constructed in a manner to prevent over-ice flooding caused by the ice being pushed to the bottom of the water body.

SCHEDULE 4

Qualified Aquatic Environment Specialist's Written Specifications and Recommendations

1(1) The written specifications and recommendations of a qualified aquatic environment specialist referred to under this Code of Practice must include:

(a) specifications and recommendations on measures required to meet the requirements of clause (a), (f) and (g) in Part 1 of Schedule 2 of this Code of Practice;

(b) a copy of information gathered and assessments made by the qualified aquatic environment specialist regarding the aquatic environment, including fish populations and habitat, in preparing the specifications and recommendations, including but not limited to:

(i) a list of all existing information, published and unpublished reports reviewed,

(ii) any new information gathered through field assessments, and

(iii) any reports prepared by the qualified aquatic environment specialist;

(c) the crossing location, including the legal description, and the UTM coordinates;

(d) a summary of physical and biological data pertaining to the water body at the watercourse crossing location including:

(i) all fish species that are present or could be present at any time during the year,

(ii) aquatic species of special concern, including rare, endangered, threatened or vulnerable species,

(iii) a description of existing aquatic and riparian fish habitat,

(iv) a description of the hydrological characteristics of the water body, and

(v) any other relevant information regarding the aquatic environment, including fish populations and habitat;

(e) a description of any field assessment study sites, the methods used during field assessments and dates and times of field assessments;

(f) a description of the anticipated effects of the works on the water body and aquatic environment;

(g) the name and signature of the person or persons responsible for the field assessments and specifications and recommendations.

(2) A field assessment for watercourse crossings must be conducted

(a) where in the opinion of the qualified aquatic environment specialist, the required information does not exist to prepare the written specifications and recommendations in order to meet the requirements of clauses (a), (f) and (g) in Part 1 of Schedule 2, including where

(i) a disruption or alteration of the bed or bank(s) of a Class B or C water body occurs, and when the fish passage requirements for a Type 3 crossing in a fish bearing water body need to be determined;

(ii) works occur or are anticipated to occur in a water body during a period of fish spawning, egg incubation, hatching or early fry development; and

(b) where the replacement or maintenance of an existing watercourse crossing is carried out in or over a Class A water body except where there is a replacement of a Type 1 crossing with a Type 1 crossing.

SCHEDULE 5

PART 1
DIRECTORS FOR THIS CODE OF PRACTICE

DIRECTOR and REGION	ADDRESS	FAX	TELEPHONE
Regional Water Manager, Northwest Boreal Region **Management Areas:** Peace River, Grande Prairie and High Prairie	Alberta Environment Natural Resources Service Northwest Boreal Region Bag 900-5, Provincial Building 9621 - 96 Avenue **Peace River**, AB, T8S 1T4	780 624-6335	780 624-6167
Manager, Regional Support, Northeast Boreal Region **Management Areas:** Fort McMurray, Lac La Biche, and St. Paul	Alberta Environment Natural Resources Service Northeast Boreal Region 7th Floor, Oxbridge Place 9820 -106 Street **Edmonton**, AB, T5K 2J6	780 422-0528	780 427-5296
Manager, Regional Support, Northern East Slopes Region **Management Areas:** Edson and Stony Plain	Alberta Environment Natural Resources Service Northern East Slopes Region 52322 Golf Course Road **Stony Plain**, AB, T7Z 2K9	780 963 4651	780 963 6131
Manager, Regional Support, Parkland Region **Management Areas:** Camrose, Red Deer and Rocky Mountain House	Alberta Environment Natural Resources Service Parkland Region 501, Provincial Building 4920 - 51 Street **Red Deer**, AB, T4N 6K8	403 340-7662	403 340-7654
Regional Water Manager, Bow Region **Management Areas:** Calgary, Canmore and Brooks	Alberta Environment Natural Resources Service Bow Region 2nd Floor, 3115 - 12 Street NE **Calgary**, AB, T2E 7J2	403 297-2749	403 297-6582
Regional Water Manager, Prairie Region **Management Areas:** Pincher Creek, Lethbridge and Medicine Hat	Alberta Environment Natural Resources Service Prairie Region Provincial Building 293, 200 - 5 Avenue, S. **Lethbridge**, AB, T1J 4C7	403 381-5337	403 382-4254

PART 2
REGIONAL BOUNDARIES MAP

SCHEDULE 6

Maps
(Section 7)

1. Peace River Management Area
2. Grande Prairie Management Area
3. High Prairie Management Area
4. Edson Management Area
5. Stony Plain Management Area
6. Pincher Creek Management Area
7. Lethbridge Management Area
8. Medicine Hat Management Area
9. Fort McMurray Management Area
10. Lac La Biche Management Area
11. St. Paul Management Area
12. Camrose Management Area
13. Red Deer Management Area
14. Rocky Mountain House Management Area
15. Calgary Management Area
16. Canmore Management Area
17. Brooks Management Area

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